

## TSK-GEL® Super-ODS Products

<b>Part Numbers:</b>	18154, 4.6mm ID x 5cm, 2 $\mu$ m	18207, TSKgel Guard filter, 4mm ID x 4mm long for 4.6mm ID columns
	18197, 4.6mm ID x 10cm, 2 $\mu$ m	18206, Cartridge Holder, for the Guard filter P/N 18207
	19541, 2mm ID x 5cm, 2 $\mu$ m*	19308, TSKgel Guard Cartridge holder for 2mm ID columns
	19542, 2mm ID x 10cm, 2 $\mu$ m*	19672, Replacement cartridges for PN 19308, 3/pkg
	20015, 1mm ID x 5cm, 2 $\mu$ m*	14594, Pre-injector membrane filter holder, SS
		03409, 13mm Nylon Membrane filter, 0.45 $\mu$ m, for PN 14594

This sheet contains the recommended operating conditions and the specifications for TSK-GEL Super-ODS columns and Guard filters. Installation instructions and column care information are described in a separate Instruction Manual.

### A. OPERATING CONDITIONS

1. Shipping Solvent: 70% Methanol - 30% Water
2. Max. Flow Rate: 4.0 mL/min (4.6mm ID)  
0.25 mL/min (2mm ID)  
0.06 mL/min (1mm ID)  
  
When a buffer with high viscosity is used, the maximum flow rate may have to be reduced so it doesn't exceed the maximum pressure drop. When changing solvents, use a flow rate equal to 25% of the maximum flow.
3. Standard Flow Rate: 1.0 - 2.5 mL/min (4.6mm ID)  
0.15 - 0.20 mL/min (2mm ID)  
0.03- 0.05( mL/min (1mm ID)
4. Max. Pressure: 30.0 MPa (4.6mm ID)  
25.0 MPa (2mm ID)  
15.0 MPa (1mm ID)
5. pH Range: 2.0 - 7.5
6. Organic Conc. Range: 0 - 100%
7. Temperature: 10 - 50°C. Reduce flow rate when operating below 10°C.
8. Cleaning Solvents: (1) High conc. solvent containing organic modifiers\*  
(2) Mixture of organic acids and high conc. organic modifiers\*  
  
\*Acetonitrile and methanol are recommended as a modifier.
9. Storage: Store the column in the shipping solvent if it will not be used within three days. Prevent air from entering the column. For overnight storage flush the 4.6mm ID column with mobile phase at 0.2mL/min and the 2mm ID column at 0.1mL/min.
10. Column Protection: An in-line 0.45 $\mu$ m filter PN 14594 between pump and injection valve is recommended. Guard filters protect the column from contamination with strongly adsorbed solutes. As a general rule, guard filters should be replaced after 30-40 sample injections or when peaks become excessively wide.
11. Guard cartridge Installation: Install the guard cartridge for the 2mm ID analytical column, PN 19672, in the cartridge holder with the arrows pointing in the same direction. The other filters listed above can be installed in either direction. Install any of the cartridge holders listed above with the arrow in the direction of flow on your HPLC system.

### B. SPECIFICATIONS

The performance of TSK-GEL Super-ODS column is tested under the conditions described in the data sheet. All columns have passed the following quality control specifications:

1. Number of Theoretical Plates (N):  $\geq$  1,500 (1mm ID x 5cm)  
 $\geq$  6,000 (2mm ID x 5cm)  
 $\geq$  12,000 (2mm ID x 10cm)  
 $\geq$  8,000 (4.6mm ID x 5cm)  
 $\geq$  16,000 (4.6mm ID x 10cm)

2. Asymmetry Factor (AF): 0.8 - 1.6 (4.6mm ID)  
0.8 - 1.5 (2mm ID)  
0.8 - 2.0 (1mm ID)